REPORT of Mr. HORACE SWORDER,

L.R.C.P., M.R.C.S., L.S.A.,

Medical Officer of Health,

For the Year ended the 31st day of December, 1897.

Presented to the Sanitary Committee on the 28th day of January, 1898, and ordered to be Printed.

MEDICAL OFFICER OF HEALTH'S OFFICE,

GEORGE STREET, LUTON,

January 20th, 1898.

GENTLEMEN,

I beg to lay before you my Report for the Year ended December 31st, 1897, being my 19th Annual Report.

During the Year 996 Births and 537 Deaths have been registered, equal to annual rates of 15.8 and 29.2 per 1000 respectively. The Births therefore exceeded the Deaths by 459.

There were 187 Deaths under 1 year.

- .,, ,, 35 ,, between 1 and 5 years.
 - ,, ,, 315 ,, from 5 years and upwards.

The Deaths were thus distributed:— Small Pox 0 Syphilis ... 3 0 Measles ... Wasting (Infantile) 29 Scarlet Fever ... 6 Convulsive 15 Diphtheria Croup 3 Hernia ... 1 Whooping Cough 20 Senile ... 55 Fevers -0 Injuries 5 Diarrhœa, &c. ... 35 Bowel Disease ... 38 Rheumatic Fever 1 Urinary Organs 4 • • • Erysipelas 0 Nervous System (Paralysis, Fits) 47 Pyœmia ... Liver Disease ... Suicide ... Phthisis ... Scrofula, Struma 3 Confinement (Puerperal Fever) 28 Bronchitis, Pneumonia, Pleurisy 68 Premature Births 42 2 Heart Disease ... Influenza Cancer ... Other Diseases 48 36

Total 537

Sixty-four Deaths were referred to the seven principal Zymotic diseases, viz., 6 to Scarlet Fever, 3 to Diphtheria Croup, 20 to Whooping Cough, and 35 to Diarrhœa. This is equal to a Zymotic rate of 1.8 per 1000, or 2.0, if the deaths occurring at Spittlesea were included.

The following table gives the number of Births, Deaths, Zymotic Death rate, and General Death rate for the last 18 years:—

		Births.		Deaths.	Zyr	notic rate.	Death rate
1880	•••	826		513		5.3	 21.2
1881		880		469		$3 \cdot 4$	 19.5
1882		957		523		$4 \cdot 4$	 21.0
1883		1027		488		$2 \cdot 2$	 19.5
1884		1019		525		3.0	 19.4
1885		1039		568		3.9	 19.7
1886		1082		533	•••	2.8	 18.3
1887		1047		596		2.6	 20.2
1888		1064		590		3.2	 19.6
1889		998		439		1.2	 14.3
1890		941		517		$2 \cdot 2$	 16.6
1891		939		439		1.0	 14.6
1892	• • •	927	• • •	562	• • •	$2 \cdot 1$	 18.5
1893		951		557		2.8	 18.2
1894		986		502	• • •	1.6	 16.1
1895		906		475		1.4	 15.1
1896		958		533		2.5	 16.6
1897		996		537		1.8	 15.8

SCARLET FEVER has been more or less prevalent all through the year-

1st Quarter	• • •	 31 ca	ses wer	e notified	(11,	12,	8)
2nd ,,		 29	,,	,,	(7,	7,	15)
3rd ,,	•••	 60	,,	,,	(9,	20,	31)
4th ,,		 65	,,	,,	(28,	22,	15)

making a total of 185 against 236 last year. Of these 27 were removed to Spittlesea. deaths occurred in the Borough, but two very young children died in convulsions at Spittlesea. Owing to the larger number of beds being recently occupied with cases of Typhoid Fever, we have only had 5 or 6 at our disposal for Scarlet Fever. During the first half of the year when we could have admitted at least 20 cases we had few applications, not having more than 3 or 4 cases in at one time. It has occasionally been a question whether, or no, a particular school should be closed, but we could never satisfy ourselves that sufficient justification existed for such an extreme measure. This year the summer holidays, far from having a beneficial influence on the progress of the disease, seem possibly to have exerted an unfavourable one. Notification of Scarlet Fever cases is most useful on the outbreak of the disease, when by its means an epidemic might even be prevented. It is useful, but in a minor degree, where all parts of the town are permeated with the infection. When we again get Scarlet Fever free, we must see to it that on the first recurring notification, removal to Spittlesea is effected, unless thorough isolation is likely to be properly carried out at home. If the Town Council be desirous to provide thoroughly for these cases, and to extinguish the infection of Scarlet Fever in or before the early days of an epidemic, it must seriously consider the advisability of lowering or remitting altogether the Hospital fees. It is difficult to make the average ratepayer understand the necessity of isolating a case for 6, 7 or 8 weeks. When he visits Spittlesea and sees his child through the window, perhaps after 2 or 3 weeks, looking very well and getting about, he fails to see why, for the benefit of the general public, he should pay what for him is a large sum, and much more than the child would cost him at home: If, further, he happen to have a few more children, he is aware that one more or less to feed makes comparatively little difference, and as for lodging, that absolutely costs nothing extra. Removal of a case to a Fever Hospital is usually effected for two reasons: 1st, for the benefit of the remaining members of the family; and 2nd, for the good of the community at large. Instances are frequently occurring where reason No. 1 obtains slightly or not at all, and in such a case, if removal to the Hospital is urged by the Authorities, it is questionable whether the fee should not be remitted in whole or in part, if, however, it be paid, it is under protest and with a feeling of being unjustly dealt with. The payment of fees in a general Hospital is a very different matter, for patients go there for their own benefit and the community is only very indirectly affected by their going or staying.

MEASLES.—During 1896 there was a wide-spread epidemic of this disease and undoubtedly most of the susceptible ehildren were attacked; consequently, during the year under review, there have been few cases, and it is satisfactory to add that no death has been recorded.

WHOOPING COUGH.—Twenty deaths were referred to this disease. There were 8 in the 1st Quarter, 8 in the 2nd, 4 in the 3rd, and 0 in the 4th. It has frequently been observed that an epidemie of Whooping Cough has followed one of Measles and this is another example of it. During 1896 we had 31 deaths from Measles and innumerable eases, but no deaths were referred to Whooping Cough; this year however presents a clean sheet as regards Measles, but Whooping Cough has no fewer than 20 deaths referred to it.

DIPHTHERIA.—Eleven eases were notified during the year, and 1 case of Membranous Croup. Of these cases 3 died. The premises on which they occurred were carefully inspected, and all sanitary defects rectified. Diphtheria is one of those maladies, for which there should always be Hospital accommodation. Spittlesea at the present time only affords accommodation for 2 kinds of Infectious disease, so that when Scarlet Fever and Typhoid cases are provided for, it is impossible to remove any cases of Diphtheria, many of which require not only skilled nursing, but such isolation as they cannot possibly get at home.

INFLUENZA.—This disease again assumed mild epidemic proportions towards the end of the 4th Quarter. Two deaths only have been directly referred to it, one in the 1st and one in the 4th Quarter, the one in the 1st Quarter must have been one of those sporadic eases which occur from time to time—endemic, not epidemic.

DIARRHŒA.—Again I have to report numerous deaths from this disease during the summer, no less than 32 being registered as due to Diarrhea, and 28 to Gastro Enteritis; and of these 60 deaths, 53 were those of children under 1 year of age. The epidemic this year rose to its height at the end of July and the beginning of August. It is always noticed that as soon as the maximum temperature of the earth 4 feet below the surface begins to deeline, so does the death rate from infantile Diarrhea. Artificial feeding always plays a large part in its eausation. Children are often fed on foods entirely unsuited for them and consequently are more prone to bowcl diseases; so when they are attacked by Diarrhea, being emaciated and weakly, they make a poor stand against the disease. If mothers were only more careful about the cleansing of the feeding bottles, and the condition of the milk given to their little ones, there is little doubt that we should have fewer deaths from these diseases. Year after year have I expressed my belief that social reasons have more to do with this mortality in our Borough than Sanitary ones, and that therefore neglect and ignorance are more potent causes than sanitary defects: the class of children too who fall victims are not the children of the more well-to-do, nor the healthy children of the poor, but mostly the weaklings of our poorer classes, who in the absence of great summer heat and its accompanying Diarrhœa, would fall victims to the first Zymotie disease which fell in their way provided that Wasting Debility or Convulsions had not previously extinguished their feeble flame of life.

TYPHOID FEVER.—During the year there were notified 37 cases of Typhoid Fever, and 6 cases of Continued Fever. Of the Typhoid cases a large proportion of the whole, namely 28, were admitted into Spittlesea, in which Institution two died, one man about a week, and a child two or three days after admission. Many of the cases were very severe with one or two or even more relapses and temperature charts which spoke volumes for the skilful care and attention which our own and the Westminster Nurses bestowed upon them. It is a source of great satisfaction that we were able to influence as many as 28 out of the 37 to consent to removal to Spittlesea. We may rest assured that only by such removal was the total number of cases limited to 37. Though Typhoid Fever is not infectious in the same sense as Scarlet Fever, Measles, &c., yet under certain conditions every member of a household might fall a victim to the disease, nor would the mischief be likely to end here, for the same ignorance of sanitary requirements might result in danger to the neighbourhood. The subject of Typhoid, always an interesting one, derives even greater importance this year from the fact of the epidemic in Maidstone, the largest Typhoid epidemic of modern times, and also from the smaller ones at King's Lynn, Clifton, Belfast and Camborne. If report does not belie other towns, the above are not the only ones where Typhoid has been rife in the year under review. We will now consider the recognised ways in which the Typhoid bacillus may be introduced into the human body and then endeavour to find out how our 37 cases arose and whether one single eause gave rise to the majority of them.

Some of the modes of introduction of the Typhoid poison are:—

- 1. Water.—Since 1862 there occurred in England over 200 outbreaks of Typhoid in connection with contaminated water supplies: the most recent being those at Worthing, Atherstone, King's Lynn, Tees Valley, Bangor, Maidstone, Belfast, and Camborne.
- 2. Milk.—The first epidemic of Typhoid reported as due to specific contamination of milk was in May, 1858. In 1870 Dr. Ballard investigated another in Islington, and in 1873 Mr. Netten Radcliffe and Mr. W. H. Power reported on a wide-spread epidemic of the same disease in West London.
- 3. Sewer Gas.—The ability of sewer gas to cause the disease is a very debatable point. Many German observers, as well as our own, almost deny the possibility, while Corfield, Payne and many others assert with equal authority the certainty of the infection derived from this source. A Scotch Professor of Hygiene delivered a powerful address showing that the conduction of Typhoid bacilli in sewer gas was almost a mechanical impossibility; while a celebrated Irish observer very clearly and lucidly explains its frequent occurrence. Who is to decide when such authorities differ? Experiments on the lower animals rather point to sewer gas predisposing to the disease by lowering vitality, but not directly causing it. In the comparatively small Luton Epidemic of 1895, Mr. Harris came to the conclusion which coincided with the opinion I had all along held, that defective drains were the cause of the fever. The drains and sewer were found to be defective; the defects were remedied, with the result that though this year the incidence of disease fell in the same neighbourhood, not one single case occurred in the street upon which the incidence of disease had at that time fallen, doubtless because all the defects were remedied.
- 4. Polluted Soil.—Evidence is fast accumulating which shows the modus operandi of the Typhoid bacillus in the pollution of the soil. This bacillus, when introduced artificially into virgin soil and allowed to remain there throughout the winter months, dies; but if introduced into polluted soil and fed with organic matter, as would be the case if a drain were leaking into it, manages to live through the winter and when summer comes, not only lives but multiplies. Where the soil is constantly fed with organic filth and the bacillus is present, there Typhoid Fever is constantly cropping up, is in fact endemic. In the autumn when rain falls it drives the ground air out, the bacilli are brought to the surface, dry into dust and are carried about by the wind.
- 5. OYSTERS.—It was pointed out two or three years ago by a distinguished London Physician that in his consulting practice, he had more than suspected oysters to be accountable for a number of Typhoid cases; since that time oysters are generally recognised as being a not infrequent cause. Dr. Klein and Sir Richard Thorne Thorne have conclusively shown that the bacilli can live many days in sea water and in sewage; and that when oysters are laid in such mixtures the organisms can be found in their shells: these may be retained for a while, and then have the power of multiplying rapidly when transferred again to appropriate media, but conserving at the same time ability to manifest hurtful properties. It is high time that the general public were protected by stringent legislation from this potent cause of mischief.
- 6. Infection from Soiled Linen or from want of Personal Cleanliness while waiting on Typhoid Cases, or from Infecting the Closet and Drains by pouring down Typhoid Dejecta without previous Disinfection.—I believe the above causes account for the second and further cases occurring so often in houses where trained nurses are not available.
- 7. ICE CREAMS AND WATERCRESSES have further been credited with transmitting the disease; the former from the use of impure water in the dens in which these luxuries are often manufactured, and the latter from being grown in specifically contaminated sewage.
- 8. Flies are also credited with carrying the infection by settling upon articles of food after revelling in decomposing animal matter.

Now, having stated the numerous ways in which the organism may enter the human body, we come to the consideration of how it was conveyed in our own Typhoid cases. The Medical Officer of Health of Sheffield states that in probably over 80 per cent. of the reported cases of Typhoid Fever, the origin of the infection cannot be ascertained with any certainty. Can we with any certainty ascertain the origin of 20 per cent. of ours. Let us now take the causes above enumerated, *seriatim*, and see how we probably stand with regard to them. First as to our Water Supply: It will be seen on referring to

the addenda that 4 samples of the Company's water were submitted to the Borough Analyst for examination in October; the result in every instance was most satisfactory. In the same addenda will be found a very interesting and important report furnished at my request by Mr. W. R. Phillips, C.E., the able Engineer of the Luton Water Company. The report is all the more important as it is now generally recognised that chemical analysis alone is useless without most careful examination of the source or sources of supply. In all but three instances the Company's water was supplied to the infected houses, but of those in which pump water was used the water in two instances was found on analysis to be totally unfit for domestic purposes, and in the other case was not above suspicion; one of these wells was probably contaminated by a leaking drain: if this contaminated the well, it would do so specifically, as it was conveying Typhoid dejecta.

MILK.—There is not the slightest ground for suspecting our milk supply: the cases were supplied with milk from over a dozen different vendors, and three houses with five cases were supplied with condensed milk.

SEWER GAS.—In a few cases sanitary defects existed, and in one instance a sink not disconnected, was found in the living room: here it is reasonable to suppose that sewer gas may have been the efficient cause, but in the other cases where defective and so-called effective bell traps were found, to say that sewer gas was the cause of infection would be simply a surmise.

Polluted Soil.—In the districts where Typhoid occurred one can only suspect a certain locality to have possibly been affected in this way. The dirty habits of many of the 97 inhabitants of the 17 houses in this yard render it quite possible that the large unpaved earth surface may be the habitat of the organism; if so, what I have seen on my numerous visits there would render it not only possible, but highly probable that the bacilli are kept alive by the organic nutriment which is unstintingly supplied them. If the surface soil of the yard really contain bacilli, and the existence of six cases of Typhoid lends colour to the suggestion, and the soil dries and forms dust, the bacilli may, by adhering to particles of dust be gently wafted into the houses, or the children may get infected by playing and rolling in the dirt.

OYSTERS, MUSSELS, &c., have before now been suspected of giving rise to cases in Luton, but this year we have not been able to trace any case to such a cause; the poor here, as well as elsewhere, are more than partial to shell-fish.

INFECTION FROM SOILED LINEN, &c.—Nine or ten of the cases were probably infected in these ways, or about one-fourth; only by removal to Spittlesea were the number of such cases not greatly increased.

ICE-CREAMS, WATERCRESSES, AND FLIES.—I have no personal knowledge of any cases occurring from the three last mentioned causes. I have so far omitted the subject of general filth such as ash-heaps, &c.: the disease was supposed to have originated in two instances in one house, by children picking over ashes.

The importance of the possible importation of Typhoid by visitors to our Borough or by our inhabitants returning from sea-side and other places must not be overlooked. The Medical Officer of Health for Islington states that a large number Typhoid cases occurring in London are derived from residents who have returned from their annual outing, and he further points out that this outing often coincides with the commencement of the oyster season. In four instances had cases recently returned from visiting; and two of them had been to a well-known sea-side resort where Typhoid is said to be rampant though not officially recognised as being so. The day will soon come when the Sanitary Authorities of these places will have to be as open as the day in this matter, or they will wake up to find their so-called health resorts dubbed by their proper names and their "special virtues" published broadcast.

I do not think any apology is needed for going so fully into the subject, which is of engrossing interest. Our Borough has about the same population as that of Maidstone and the subject is therefore of peculiar interest to us. Such a calamity will burden Maidstone for years, and would probably ruin us for ever. When one considers that £30,000 was raised as a Relief Fund, and that it will all be required, that about 1900 people fell victims to the disease, 1 in 18 of the total population, but 1 in 10 of those living in the area supplied by the polluted water, it may well give us pause. When one thinks of the widows and orphans, of the damaged trade, the closed schools, the heavy rates and the diminished incomes, we may well think that money even lavishly bestowed on sanitary matters is money well spent.

The Borough of Lynn trifled with an evil, generally admitted for years, but grudging the money to rectify it, have suffered accordingly. I would suggest, in addition to the more general recommendations especially mentioned later on in this report, the following more specially relating to Typhoid Fever:—

- 1.—Systematic examination of all the drains in the town, commencing in those streets where Typhoid has recently occurred. How necessary this is may be gathered from the records of one Sanitary Association which showed that satisfactory reports were obtained from only 30 per cent. of the houses examined, while in 50 per cent. defects were discovered dangerous to health!
- 2.—Systematic flushing of the sewers.
- 3.—That all back yards, especially where they are thickly inhabited, should be paved so as to allow of all filth being speedily removed and the surface cleansed.
- 4.—That we should always be prepared to provide adequate accommodation for Typhoid cases, in the firm belief that by so doing the disease will be considerably limited.

PHTHISIS.—There were 35 deaths from Phthisis, equal to a rate of 1.02 per thousand of the population. This is a slightly higher rate than that of last year which was '96, but considerably under the average of the last 10 years. Improved sanitation is year by year lessening the number of deaths from this disease throughout the country. The 35 deaths during the year were distributed thus:—7 in the 1st quarter, 10 in the 2nd, 5 in the 3rd and 13 in the 4th. During the past 19 years of which I have the records before me, there have occurred 898 deaths in Luton from this disease alone, and it is remarkable how evenly they have been distributed throughout the 4 quarters of the year. In the 1st quarter during those 19 years, there were 228 deaths, 205 in the 2nd, 233 in the 3rd, and 232 in the 4th. It will thus be seen what a number of victims the tubercle bacillus—the specific organism of Consumption—has claimed during this comparatively short period, and these only by means of its ravages on the lungs, whereas it attacks almost every part of the human body. The terrible activity of this microscopic organism may be somewhat realized when one considers the fact that about one-fifth of the total deaths of human beings are assigned to tubercular diseases. The sputum of patients suffering from Phthisis contains countless numbers of these germs which if left to dry are carried about in the form of dust. It is therefore important that all sputum should be expectorated into a vessel containing some disinfectant and then burnt or carefully poured down the drains, and the vessel thoroughly scalded and disinfected. It is always advisable to disinfect the room in which a Phthisical patient has died, and quite as much so to frequently cleanse and constantly ventilate the room usually occupied during life. When our storm water and sewerage scheme, which has been now commenced, has been carried out and been in operation for some little time, we may almost confidently expect a further reduction in the Phthisis mortality.

CANCER.—Thirty-six deaths were referred to Cancer and other malignant diseases—the largest number I have had to record as occuring during a single year of the past 19 years. How far the increase in the number of deaths from Cancer is due to improved methods of diagnosis, it is impossible to estimate, but it is certain that the lengthening duration of life brought about by improved sanitation has something to do with the increase, for more people now live to those ages when Cancer is likely to attack them.

INFANTILE MORTALITY.—There were 187 deaths of children under 1 year, giving an Infant Mortality rate of 187.9 per 1000 births. The high figure which the Infant Mortality this year reaches is entirely due to an extensive epidemic of diarrhoa in the summer.

In the 1st Quarter the Infant Mortality was 141·2.

,, ,, 2nd ,, ,, ,, ,, ,, 178·4.

,, ,, 3rd ,, ,, ,, ,, ,, ,, ,, 100·0.

SANITARY INSPECTIONS.—The Inspector of Nuisances presents, as usual, a long list of Nuisances which have been abated; this list speaks for itself as to the large amount of good sanitary work which has been effected through his exertions. Together we have visited frequently the most insanitary property and the results of those visits are included in the following list:—

Defective Drains and Bell-	-traps				575
No eonstant Water Supply	y to W	.C.s			170
Drains and W.C.s blocked					160
Defective W.C.s			•••		145
Sinks not disconnected					29.
Workrooms requiring Whi	tewash	ing			1
Offensive Smells and Aeeu	mulati	ons	• • •		33
Defective Ash-pits	• • •		•••		8
No Ventilating Pipes to Dr	rains				10
Pigs kept contrary to Bye-	laws				41
W.C. Water Apparatus ou	t of ord	ler			2
Defective Paving					6
Defective Soil Pipes to W.	.C.s				2
Defective Urinals					1
Defective Dung-pits					1
Insufficient W.C. Accomm	odation.	ı			1
Slaughter-house requiring	White	wash	ing		1
No Intercepting Traps					21
Defective Channels and W	aste Pi	ipe s	to Sinks		12
Insanitary Privies					10
Defective Ventilating Pipe	S				38
No Receptaele for Ashes					6
No separate Sanitary Acco	mmoda	ation	for Fem	ales	7
Insanitary Dwellings					38
No Drains to Stables					2
Over-erowded Workrooms					1
No Dung-pits to Stables					6
Other Nuisanees				•••	37
			Total		1,384

INSANITARY DWELLINGS.—During the year 38 houses were found in an insanitary condition. These were thoroughly cleansed and put in good order.

PRIVIES.—The small remaining number of privies has been still further reduced, six more having been converted into W.C.s.

HOUSE DRAINS.—Twenty-nine sinks have been disconnected and made to discharge on to 6-inch earthenware syphon gully traps, fixed in the open air. Five hundred and seventy-five nuisances arising from defective drains and bell-traps have been abated.

ASHES AND REFUSE COLLECTION.—11,503 loads of ashes and refuse have been removed by the Corporation teams: last year's total was 11,049. 6,332 loads were deposited at the Sewage Works, 1,551 loads were sold and 3,620 deposited elsewhere. The cost of disposing of the ashes was £1,239 11s. 0d. The sale of them amounted to £138 0s. 6d. The time is soon coming when a refuse destructor will be indispensable.

CLEANSING OF CLOSETS.—During the year 338 loads of night-soil have been removed, for the removal of which £17 7s. 9d. has been charged and the cost in wages was £28 7s. 0d. It is satisfactory to know that this indispensable but insanitary work, which has not even the recommendation of meeting its own expenses, will soon be reduced almost to the vanishing point.

VENTILATING SHAFTS.—No additional ventilating shafts have been erected during the year. The total number of these shafts ventilating the main sewer is 37.

WATER SUPPLY.—Thirteen samples of water have been analysed during the year, of which four were totally unfit for domestic purposes: in all these cases the Company's water was laid on.

MILK PURVEYORS.—Under the "Dairies, Cow Sheds and Milk Shops Order" of 1885, four persons have registered as purveyors of milk and one as a cow-keeper.

FOOD AND DRUGS ACT.—Under the "Sale of Food and Drugs Act," 60 samples have been submitted to the Public Analyst, viz.,

Cocoa	 1	Milk	 40	Vinegar	2
Butter	 14	Lard	2	Coffee	1

Only 2 of the above—2 of milk—were returned as adulterated. In the first case the offender was fined, including costs, £1 12s. 0d.; the second was dismissed on the defendant paying the costs, 12s. 6d. It is exceedingly satisfactory to find that out of 40 samples of milk, 38 were unadulterated. I have again and again pointed out the absolute necessity of making numerous analyses of milk. Adulteration of milk is most reprehensible—in fact a crime, but the profits of such adulteration are so enormous, that the consideration of that, seems to overshadow the enormity of the offence.

SLAUGHTER-HOUSES have been frequently visited during the year and have been found in good condition. 31 licenses have been renewed and 1 new license granted.

BAKE-HOUSES have beed examined twice during the year and found in satisfactory condition.

MARKETS have been systematically visited but in no single instance have I been called upon to condemn any meat or fish. The Inspector examined, on one occasion, some fish and fruit, at the request of the owners, before exposure for sale and finding the articles unfit for food, caused them to be destroyed.

FACTORY & WORKSHOP ACTS.—The factories and workshops have been inspected during the year: one work-room required cleansing and white-washing and in one case there was over-crowding.

MAIN DRAINAGE AND STORM WATER SCHEME.—The large outfall sewer has been commenced and about 1000 feet completed. This is the commencement of the outfall, intercepting and other sewers, which, together with the storm water drainage, will take about three years to complete at an estimated cost of £40,000.

SEWAGE WORKS.—During the year one new tank has been completed, giving a storage capacity of about 1,000,000 gallons. Two others will be completed during the ensuing year. The whole will then have a capacity of between two and three million gallons.

DISINFECTANTS have, as usual, been distributed gratis and freely used, the cost of them being £92 10s. 0d.

SPITTLESEA.—During the year 30 cases of Typhoid Fever and 27 of Scarlet Fever have been admitted, making a total of 57. Of the Scarlet Fever cases, 2 deaths only occurred, both being of young children who died in convulsions. Of the Typhoid cases, 1 was admitted in May, 1 in July, 1 in August, 9 in September, 12 in October, 5 in November and 1 in December. It is satisfactory to report that all matters relating to the removal and care of patients at Spittlesea were very satisfactory: the removals were effected with the greatest promptitude. Many of the Typhoid cases were very severe and suffered annoying relapses but, in spite of all that, only 2 died and both cases were in only a few days, and were all but hopeless on admission. The nursing was admirable, the patients most appreciative, and outside there has been nothing but grateful acknowledgment of the services rendered to the patients. I am now attending at a fixed salary all cases unappropriated by other medical men, and this, if not too one-sided, as time alone can show, will be as satisfactory to me as I hope it will be to you: for, while I have the good of the patients and my own reputation as much at heart as I have had hitherto, you will certainly not find that they will suffer by the altered arrangement.

SCHOOLS.—None have been closed during the year.

IMMEDIATE NOTIFICATION.—The Inspector of Nuisances has kindly furnished me with the following table:—

								No. of		No. of	
Name of Disease.		North Wa	rd.	East War	d.	West Wa	rd.	Cases.	Hou	ises Infected	l.
Scarlet Fever		56		51	• • •	79		186	• • •	143	
Erpsipelas		17		17	•••	18	• • •	52		52	
Typhoid Fever	• • •	3		23		11	• • •	37	•••	26	
Diphtheria		4		3	• • •	5	•••	12		12	
Puerperal Fever		1		4		1	•••	6		6	
Continued Fever	• • •	2		3	,	1		6		6	
Choleraic Diarrhœa		1	• • •	0		0	• • •	1		1	
				——		——					
		84		101		115		300		246	

All the foregoing cases were inquired into, visits being paid as promptly as possible and information given as to isolation and use of disinfectants; arrangement also being made for prompt removal to Spittlesea. Disinfectants were also freely supplied to those applying at the Inspector of Nuisances' office.

INFECTIOUS DISEASES, ADVICE AS TO.—In the 1st Quarter you were advised as to the want of Small Pox accommodation and your attention was drawn to the highly dangerous and important fact that 4,377 lodgers had been accommodated during the Quarter, in the three Common Lodging Houses. In the 2nd Quarter you were advised that one pavilion was unavailable, owing to beds and bodding being stored there, and further, that it was impossible to treat three different infectious diseases at one and the same time. In the 4th Quarter you were advised that the Schools of the Borough should be cleansed and purified during the Xmas holidays and also that many of the road ventilators in the East Ward, where the majority of Typhoid cases had occurred, should be unsealed, and further, that the systematic flushing of the sewers in the East Ward should be continued. I am pleased to say that most of these recommendations have been attended to.

SANITARY REQUIREMENTS:—

- I.—The provision of Accommodation for Small-Pox cases.
- II.—The purchase of a Steam Disinfector.
- III.—Some small Additions to Spittlesea.
- IV.—The replacing of obsolete Bell Traps by Syphon Traps.
- V.—The provision of a proper Water Supply in every Closet.
- VI.—To draw the attention of the neighbouring Rural Sanitary Authorities to the importance to them and to us of ensuring the proper enforcing of the Dairies, Cowsheds and Milk Shops' Order of 1885.

As regards No. I. of these requirements, we are, as I have so often pointed out, quite unable to grapple—at all events with any likelihood of success—with the first case of Small Pox that may arise, owing to the delay that must unavoidably take place before removal to a Hospital could be effected. While we have thousands of tramps passing through our Lodging Houses yearly, we are always standing on the brink of a volcano. I have not yet spoken to one business man on or off the Council, who has not allowed that an epidemic of Small Pox would, at least temporarily, seriously interfere with the trade. The general public arc only too willing to trust responsible advisers when their action or inaction in any matter spells economy, but are equally ready to blame them severely if ever the day of reckoning arrives, for they it is who have to bear all the brunt of the public accusations hurled against those who have made a mistake even if the public themselves have endorsed it. I feel confident that if this matter were put fairly and squarely before the public they would not feel comfortable until the Borough was made reasonably safe in this important direction. In 1895 Small Pox became epidemic in a neighbouring Borough, prevailing from February to June (our busy and money-making time). In spite of precautions the disease was not limited to this Borough, but extended to five and probably seven other places. There were forty-five cases in all and nine deaths. In one of the affected districts the Medical Officer of Health writes "I do not think that any unprejudiced person can study the above facts without admitting the moral that they so forcibly point. If ever there was an instance in which the paramount importance of an isolation hospital was conclusively proved it is surely this one." He further says "As it was, I firmly believe that the want of any arrangement for isolation is entirely answerable for the last ten cases which occurred and for the loss of two lives." One would think that such a strong statement as the above would result in some decisive action, but on referring to the next year's report the Medical Officer of Health states that the effect of the Notification Act is almost nullified by the absence of any Infectious Hospital, and he goes on to say that it is impossible for him to express more strongly than he did in 1895 the absolute necessity for such a building. Fortunately we escaped any ill effect from the above-mentioned epidemic, but only by our long-continued good fortune. In spite of long delay even the flood came with the usual result to the unprepared. An Authority states that a point of eminent importance in preventing Small Pox is the provision of sufficient and satisfactory Hospital accommodation. He says that it may seem a serious undertaking to prepare a large amount of such accommodation, but in Glasgow it has been found much less costly and much more satisfactory so to prepare, than to have an overflow of Small Pox cases soaking and infecting through the city. Every case of Small Pox should be treated in a Hospital, if it is the intention to maintain an effective grip upon the disease. I maintain that in Luton it is essential to maintain such a grip. Personally I am only asking for some small building, thoroughly isolated, to start with, so as to be able to cope with the disease at its first inception. If the disease made headway, no one would be so foolish as to grudge the money necessary to erect pavilions, such as we have now in use for other fever cases, and such as were erected in Edinburgh in hot haste during my visit three or four years ago in November. My excuse for making these oft-repeated remarks is that I am a Health Officer, one whose mission is to prevent disease, and if not prevented to minimise its ravages. Sanitary Science is nothing if not preventive! In this case one form of prevention, vaccination and re-vaccination, for reasons best known to yourselves, is apparently out of the question, therefore there ought not to be any hesitation in falling back upon another. To carry out both thoroughly is a counsel of perfection; to carry out the second is something, but to sit with folded arms and do nothing ought to be impossible to business men and more especially to men to whom is confided the health, the subsistence, the fortunes, and the lives of their fellow townsmen. In this connection it is only right to state that it is claimed for Glycerinated Calf Lymph, that by its use, none of those bad effects, which occasionally occur and have tended to bring vaccination into disrepute, are ever observed. This may have very practical import in the near future by doing away with nearly all the objections raised against the practice of vaccination.

No. II. has been suggested regularly for the last few years.

No. III. is quite a necessary requirement.

No. IV. is being effected.

No. V. is also being effected.

No. VI.—It seems essential that towns receiving nearly all their milk from outside sources should have some official information as to the sanitary condition of the cowsheds and dairies, and also of the general surroundings, including their water supplies.

In conclusion I would thank you for again appointing me Medical Officer of Health for this important Borough. I am sure you will bear me out that if we have had at times a certain amount of friction it is not because I have been neglectful of my duty or have gone to sleep over it, but rather because I am in the habit of speaking and writing as strongly as I feel, not caring to mince matters. With regard to the future, the sanitary condition of Luton under progressive counsellors, is bound to improve; and the general public ere long will back them up in all that pertains to the general welfare, so as to place Luton among the foremost towns in Britain from a sanitary point of view. My best thanks are due to all my brother Officers, who have this year, as in every preceding year, given me their invaluable advice and assistance.

I am, Gentlemen,

Yours obediently,

HORACE SWORDER.

To the Members of the Sanitary Committee of the Borough of Luton.

BOROUGH OF LUTON.-LUTON WATER.

CERTIFICATE of the Borough Analyst, Mr. A. E. Ekins, upon the SAMPLE of WATER taken from the Reservoir of the Luton Water Company on Saturday, the 2nd day of October, 1897, by Mr. Charles Wright, the Iuspector of Nuisances, with the consent and in the presence of W. R. Phillips, Esq., C.E., the Engineer of the Company.

Sample of Water, marked No. 4, received from Inspector Wright, on October 2nd, 1897.

RESULT OF ANALYSIS.

					Grains	per Gallon,
Tetal Solids						24.0
Chlorine						1.3
Free Ammo	nia .					0.0003
Albuminoid	Animon	iia				0.00032
Nitrogen as						0.230
Oxygen abso	orbed in	15 m	inutes			0.009
Oxygen abso	orhed in	4 1101	110			0.022
Oxygen abse	or bear 111	. 1100	719	• •		0.022

MICROSCOPICAL EXAMINATION -- Very satisfactory.

Physical Examination—Appearance in 2ft, Tube .. Clear. Appearance on Ignition .. White.

Remarks.—The above Water is of very good quality and free from all Sewerage contamination.

(Signed)

October 11th, 1897.

ARTHUR E. EKINS.

BOROUGH OF LUTON.

GERTIFICATE of ANALYSIS of THREE SAMPLES of WATER taken by Inspector Wright on the 9th October, 1897, supplied by the Luton Water Company, as under:—

No. 6 from 32, St. Ann's Road.

No. 7 from Bury Park Road (Mr. Luck's).

No. 8 from 15, Chase Street.

Three Samples of Water, marked 6, 7, & 8, received from Inspector Wright, on Oct. 9th, 1897.

RESULTS IN GRAINS PER GALLON.

Sample.		No. 6.		No. 7.	No. 8.
Total Solids		24.0		23.0	 24.5
Chlorine		1.3		1.3	 1.3
Free Ammonia		0.0003		0.0004	 0.0003
Albumenised Ammonia		0.0004		0.00038	 0.00036
Nitrogen as Nitrates, &c.		0.24		0.27	 0.25
Oxygen absorbed in 15 minu	tes	0.010		0.009	 0.010
Oxygen absorbed in 4 hours		0.023		0.024	 0.022
MICROSCOPICAL EXAMINATION	very	satisfacto	ry	ditto	 ditto
PHYSICAL EXAMINATION—					
Appearance in 2ft. Tube		Clear.		Clear.	 Clear.
Appearance on Ignition		White.		White.	 White.

REMARKS.—All the above Waters are of very good quality and free from all Sewerage contamination.

(Signed)

October 11th, 1897.

ARTHUR E. EKINS.

LUTON WATER COMPANY.

[Extract from Statement made by the Engineer of the Company.]

The Pumping Station in Crescent Road, consists of two Artesian Wells, one 12 inches diameter, 320 feet deep, the second 24 inches diameter. Both these wells are tubed with irou for 100 feet from the ground, thus preventing any surface water getting into the bores. The tops of the Wells are covered in with bricks in cement with iron entrance doors.

The Engine Houses contain one set of beam engines with 4 pumps, also a double acting pumping engine with two pumps. These raise the water through a 16-inch main up Crescent Rise and across the fields to the top of Hart Hill into the two Reservoirs built of brick in cement, one having a capacity of 1,100,000 gallons and the other 514,000 gallons. These Reservoirs are covered over with brick arches in cement with concrete over same, so that it is impossible for any contamination to take place. The entrance to the Reservoirs are neatly tiled and kept perfectly clean.

From the Reservoirs the water gravitates into the town, one leading main coming down Hart Hill, up Church Street, along Park Street to the Market Hill. The other down High Town Road, Midland Road, and along Bridge Street to the Town Hall, the supply being on the constant system is a service of palatable water of excellent quality from deep wells.

The water is fresh from the springs a few hours before it is consumed.

The chemical tests made of the Company's supply from time to time not only from the Reservoirs, but also from the domestic services about the town, shew the Company's supply to be such as is rarely excelled by any Water Company.

The pressure of water is constant and is such that with few exceptions the water supply is sufficient to cope with any fire which may arise in the town without the aid of fire engines.

All the service pipes are of galvanized iron, not any lead being used.

DECEMBER 31st, 1897.

REPORT,

OF

Mr. HORACE SWORDER,

L.R.C.P., M.R.C.S., L.S.A.,

Utedical Officer of Health,

FOR THE

Year ended 31st December, 1897.

GEO. SELL,

Town Clerk.

